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**Patentanmeldung Nr. Patent application No. Demande de brevet n°**

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R C van Dijk



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Container aid

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## Container lid

22. 08. 2003

(51)

## Description

5    **Field of the invention**

The invention relates to a thermoformed plastic container lid comprising a substantially sheet like lid body having a depending skirt (1) extending around the full periphery of the lid body, the skirt (1) being suitable for engagement with the peripheral portion of a plastic open top container, comprising a lid rim (2) in a position near the periphery of the lid body, which divides the lid body in a centrally located mirror (3) and an outer part (4) on the other side of the lid rim (2). Such a container lid is also known as a two-step container lid (see figure 1), as opposed to a one-step container lid (see figure 2), in which the rim (2') engages with the container rim.

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**Background to the invention**

A two-step container lid as described in the preamble of claim 1 is known from DE29910076U1. A two-step container lid may be used in situations where the container is covered with a cover foil, whereas the one-step lid may not. The reason is that the mirror of the two-step lid is at the same level as the top rim of the container and the foil. A one-step container lid cannot be used in combination with a foil at the level of the container rim, since the mirror of the one-step lid will be at a level below the level of the foil.

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A disadvantage of the known two-step container is that, after initial opening, when the user wants to re-close the container, the top rim of the container may fall  
5 into the recess (8) of the lid rim (2), after which the container may cannot be closed. This re-closing problem especially occurs, when the user wants to re-close the container using one hand, and presses the lid on the container from one side to the other.

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It is therefore an object of the invention to avoid the above re-closing problem.

#### Statement of the invention

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This object is attained according to the invention in that the lid rim (2) comprises one or more bridges (5) connecting the mirror (3) and the outer part (4).

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The bridge or bridges (5) will cause the lid to slide over the container rim until the container rim is caught by the skirt (1), it is no longer possible that the container rim enters into the recess (8) of the lid rim (2).

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An additional advantage of the invention is that the bridges (5) reduce or even avoid the problem of nesting of the lids when stacked and put under pressure, e.g. in a production line. Conventional two-step lids, may when  
30 stacked and put under pressure nest, because the lid rim (6) of a lower lid may be pushed into the recess (8) of

the lid rim (2) of a lid higher in the stack. This problem is also solved by the provision of bridges (5).

#### Detailed description of the invention

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The container and lid according to the invention may be made by the technologies known in the art, from materials known in the art.

- 10 The lid is made by thermoforming. In thermoforming a plastic sheet softened by heat is formed either into or around a mould. This forming step may be supported by vacuum, air pressure, and material distribution may be improved by plug assistance. There are three main groups  
15 of thermoforming: vacuum forming, pressure forming and matched mould forming.

- The material of the lid and container may be any material known for this use. Examples of possible  
20 materials are HDPE (high density polyethylene), LDPE (Low density polyethylene), PP (polypropylene), PET (Polyester Terephthalate), PVC (Polyvinylchloride), OPVC (oriented PVC) , PC (Polycarbonate), EVOH (Ethylenevinylalcohol) and multilayer materials of two  
25 or more of these polymers.

The shape of the container lid may be any shape, for example round, rounded rectangular, oval or square.

- 30 The skirt (1) is preferably provided with indent features (7) see figure 4. These indent features (7) fix the lid on the container when closed.

In a preferred embodiment, the one or more bridges (5) are in the same plane as the mirror (3). In another preferred embodiment the lid rim (2) comprises four or more bridges (5). Four bridges (5) may already be effective if positioned on each of the sides of a square or rectangular container lid. Preferably the container lid comprising six or more bridges (5) and preferably the bridges (5) are distributed evenly around the periphery of the lid.

The number of bridges may be easily determined by the skilled person taking into consideration the size and shape of the container lid. A large container lid will need more bridges than a small container lid.

In another preferred embodiment the container lid comprises an uneven number of bridges (5) evenly distributed around the periphery of the lid. This improves the flexing strength of the lid, compared to the same lid with an even number of bridges distributed evenly around the periphery of the lid. Preferably the width of the bridges (5) is 3 mm or more. The width should be such that the bridge does not break when a pressure commonly used to close the container is applied.

The lid and container may be used for packaging consumer goods, such as for instance foods, such as for instance margarines or spreads.

**Description of the drawings**

- Figure 1: Cross-section of detail of two stacked one-step container lids
- 5 Figure 2: Cross-section of detail of two stacked two-step container lids
- Figure 3: Top view of container lid according to the invention having eight bridges
- 10 Figure 4: Side view of container lid according to the invention showing skirt (1) and indent features (7)

**Claims**

1. Thermoformed plastic container lid comprising a substantially sheet like lid body having a depending skirt (1) extending around the full periphery of the lid body, the skirt (1) being suitable for engagement with the peripheral portion of a plastic open top container, comprising a lid rim (2) in a position near the periphery of the lid body, which divides the lid body in a centrally located mirror (3) and an outer part (4) on the other side of the lid rim (2), characterised in that the lid rim (2) comprises one or more bridges (5) connecting the mirror (3) and the outer part (4).
2. Container lid according to claim 1, wherein the one or more bridges (5) are in the same plane as the mirror (3).
3. Container lid according to claim 1 or 2, comprising four or more bridges (5).
4. Container lid according to claim 3, comprising six or more bridges (5).
5. Container lid according to any of claims 1-4, wherein the bridges (5) are distributed evenly around the periphery of the lid.
6. Container lid according to any of claims 1-5, comprising an uneven number of bridges (5).



7. Container lid according to any of claims 1-6, wherein the width of the bridges (5) is 3 mm or more.

22. 08. 2003

## ABSTRACT

(51)

Thermoformed plastic container lid comprising a substantially sheet like lid body having a depending skirt (1) extending around the full periphery of the lid body, the skirt (1) being suitable for engagement with the peripheral portion of a plastic open top container, comprising a lid rim (2) in a position near the periphery of the lid body, which divides the lid body in a centrally located mirror (3) and an outer part (4) on the other side of the lid rim (2), wherein the lid rim (2) comprises one or more bridges (5) connecting the mirror (3) and the outer part (4).

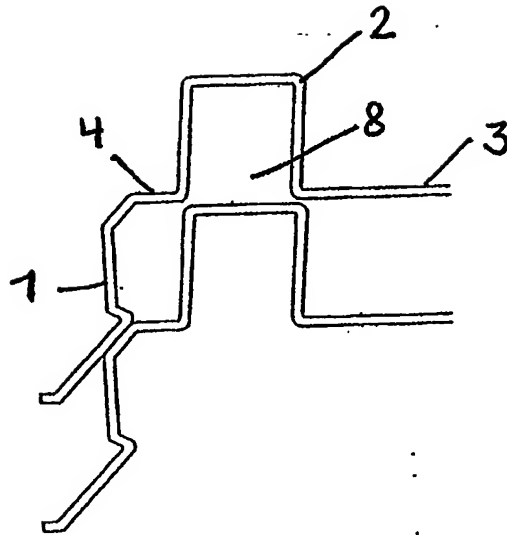


FIG. 1

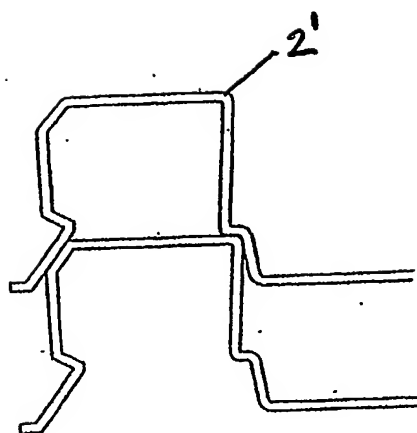


FIG. 2

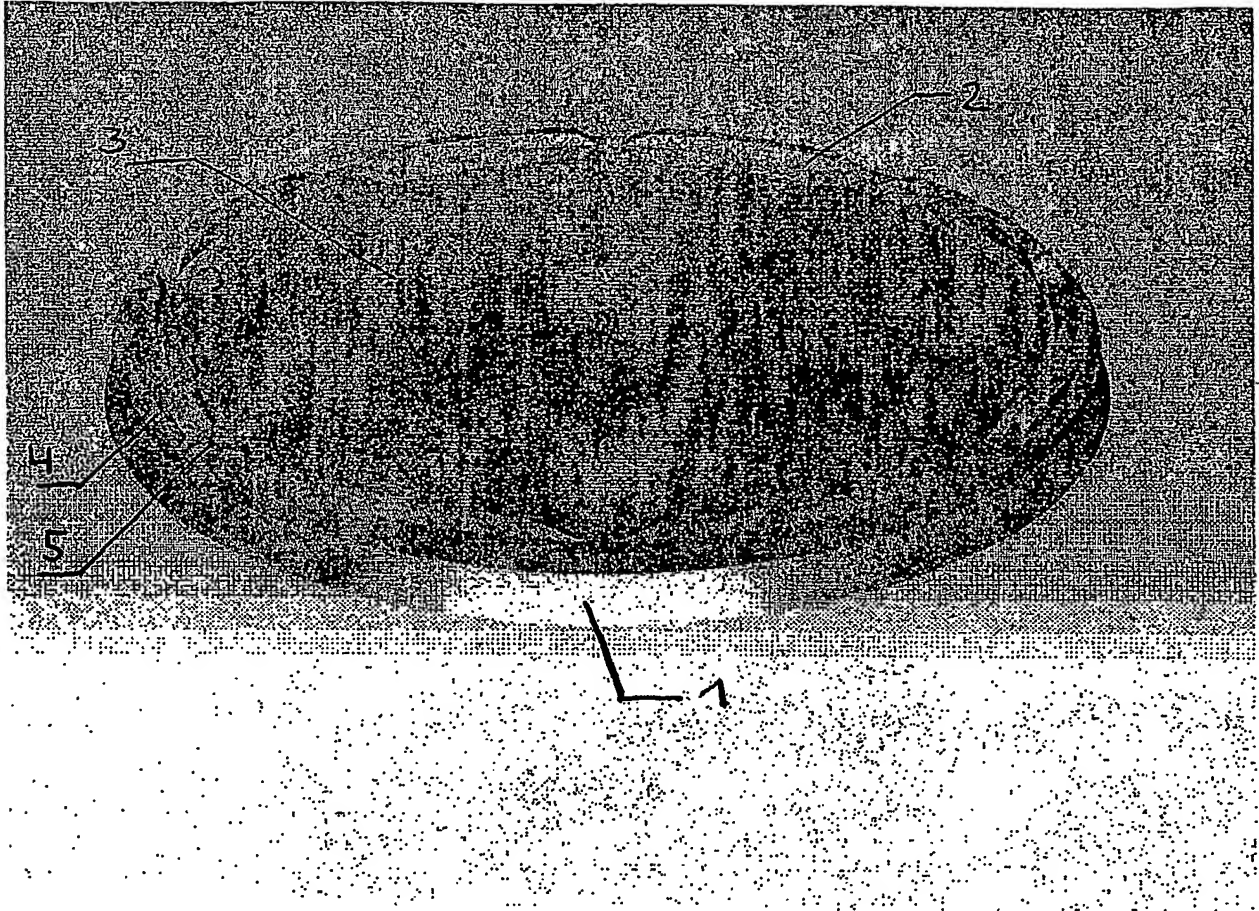


Fig. 3

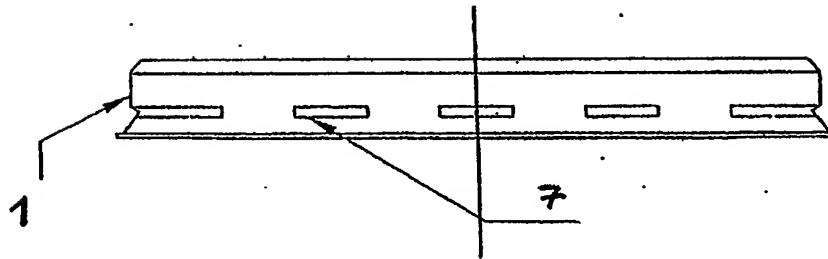


FIG. 4

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